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REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the previous final Office Action dated 20 February 2008 (withdrawn), the replacement final Office Action dated 22 August 2008, and the preceding non-final Office Action dated 3 October 2007. Claims 1-23 remain pending herein.

At the outset, the courtesies extended by the Examiner in granting the 20 August 2008 telephonic interview, and the professionalism he demonstrated during that interview, are appreciatively noted. During the interview, the previous final rejection of 20 February 2008 was withdrawn and time to reply for the applicant was reset.

In the current final Office Action, the Examiner rejected Claims 1-23 under 35 U.S.C. § 103(a) as being unpatentable over Hollander, U.S. Patent No. 6,182,258, in view of Thompson, et al., U.S. PG Pub 2004/0093476, hereinafter Thompson.

Before discussing the references, it is believed beneficial to initially and briefly review the invention of the subject Patent Application. The subject Patent Application is directed to a method and system for automatic test generation comprising among its combination of features: automatically generating at least one test for testing a simulation model of a device under test (DUT) in a test environment during a test verification process by providing a plurality of scenarios, each scenario featuring at least one constraint relating to a relationship

with at least one other scenario; selecting at least one scenario according to the at least one constraint by resolving conflicts among the constraints of the plurality of scenarios; and automatically generating the test from the at least one selected scenario to provide at least one input for driving simulated operation of the DUT.

The full combination of these and other features now more clearly recited by Applicant's pending Claims are nowhere disclosed or suggested by any combination of the cited references. It is respectfully submitted that certain correlations of features that the Examiner relied upon in citing the references are not well founded.

Note, for instance, that while Hollander does generally disclose a method and apparatus for test generation during circuit design, it does not disclose, teach, or suggest: "a method...for **automatically generating at least one test for testing a simulation model of a device under test (DUT)** in a test environment during a test verification process...comprising: providing a plurality of scenarios..." as recited in independent Claim 1.

For this proposition, the Examiner cites Column 12, lines 3-10 of Hollander: "...the verification tests are generated...." However, the Examiner is urged to consider the Hollander reference in its entirety. While it is respectfully submitted that sentences can be cherry-picked from a reference, it is by the MPEP's mandate that those sentences be considered in context, in the entirety of

the reference, including portions that would lead away from the claimed invention. (MPEP § 2141.02(IV))

Immediately preceding the citation that the Examiner provided is a paragraph setting this context and showing that the test generation is far from automatic:

> To perform such coverification, the **user must provide** a C routine interface to the external program, a script interface to the invention in the verification-specific object-oriented programming language, and a bus-functional model for the CPU. (Col. 11, lines 29-36, emphasis added).

From a plain reading of the reference, it cannot fairly be said that Hollander provides a method for automatic test generation if the user must provide a plurality of customized interfaces and models for each specific DUT to be tested.

Further, it can be seen that these tests are not, in fact, "verification tests," but rather "co-verification tests" which are defined as "Connecting with external software that takes input **from** the DUT." (Col. 12, Line 1, emphasis added). This is believed to diverge quite plainly from providing input **TO** the DUT as claimed: "automatically generating at least one test for testing a simulation model of a device under test (DUT)...automatically generating the test from said at least one selected scenario to provide at least one input for driving simulated operation of the DUT." It is further respectfully submitted that "test" as used in Hollander cannot be equated with "scenario" as claimed in the subject Patent Application.

The Examiner next selectively cites Hollander's disclosure of: "drives pre-computed test vectors into the DUT" from the citation of Column 2, lines 24-32:

> A **static testbench** is a program that drives pre-computed test vectors into the DUT simulator, and/or checks outputs after the simulation is completed. Such static testbench is frequently used to increase functional coverage during design development. (Col. 11, lines 26-29, emphasis added).

The Examiner is again urged to consider the reference in its entirety. Firstly, this citation was used in a 103 obviousness rejection, however, this citation does not come from the teachings of the Hollander reference, but instead, from the Background of the Invention section, which Hollander is teaching expressly away from. Considering the selection in context would clearly guide one of ordinary skill in the art AWAY from utilizing the clearly contrary and deficient teachings of a static testbench. Please consider the two paragraphs immediately following the cited paragraph:

> Generally, a **static testbench** is used to check the results of a test after the test has been completed. Thus, an error in the test is not detected until after the test is finished. As a result, the internal state of the device at the point of the error is not determined. To analyze signals and register states, the *test must be re-run* to the point at which the error occurred. *This procedure consumes simulation cycles, and can require the expenditure of considerable time, especially during long tests.*
>
> A **static testbench** *usually requires as* [sic] *least as much, and frequently twice the amount of code as the HDL model to which it is applied.* The static testbench code is *difficult to manage and control.*

> Additionally, a static testbench is *almost completely design-specific*, and contains fixed code, written for *one design*. Thus, a static testbench is *rarely re-usable for a next-generation device*. (Col. 2, Lines 33-49, emphasis added).

From, the above citation, it is made clear that the Hollander reference teaches expressly away from the approach the Examiner contends Hollander teaches, indeed enumerating several material disadvantages to employing such a static testbench.

The Examiner then plainly concedes that Hollander does not disclose "each scenario featuring at least one constraint relating to a relationship with at least one other scenario; selecting at least one of said plurality of scenarios according to said at least one constraint by resolving conflicts among said constraints of said plurality of scenarios." For this, the Examiner cites the Thompson reference for its provision of: "...preventing memory usage conflicts when generating and merging test cases...", [0001], and "...memory segment use is noted..." [0003].

However, it is respectfully submitted that this is not a fair correlation, or reading of Thompson as one of ordinary skill in the art would read it. Thompson immediately follows up the statements above with:

> when **each of the 2nd through Nth test cases is generated**, a memory segment of the same size, **but not overlapping...is assigned**. ([0003], emphasis added).

Therefore, Thompson does NOT disclose, teach, or suggest: "**selecting** at least one of said plurality of scenarios **according to said at least one constraint by resolving conflicts** among said constraints of said plurality of scenarios." Indeed, Thompson does NO selecting or resolving, instead promiscuously generating ALL 1st through Nth test cases, rather than selecting a subset based on a constraint. In fact, Thompson needn't even worry of conflicts because at time of generation or instantiation, the memory spaces are defined *ab initio* with *a priori* knowledge to have "non overlapping" memory spaces. It can clearly be seen that a conflict could never happen in Thompson, and so the step of selecting a subset of non-conflicting scenarios is necessarily precluded and obviated.

Thus, among other deficiencies, the combination of Hollander and Thompson, does not suggest, allude, or provide, and indeed expressly teaches away from the provision of: " A method stored on a computer readable medium including computer executable instructions for automatically generating at least one test for testing a simulation model of a device under test (DUT) in a test environment during a test verification process, the method comprising:

providing a plurality of scenarios, each scenario featuring at least one constraint relating to a relationship with at least one other scenario;

selecting at least one of said plurality of scenarios according to said at least one constraint by resolving conflicts among said constraints of said plurality of scenarios; and

automatically generating the test from said at least one selected scenario to provide at least one input for driving simulated operation of the DUT," as is necessary to independent Claim 1.

Given the clearly contrary and manifestly deficient teachings of the combination of the Hollander and Thompson references, withdrawal of the Examiner's rejection under 35 U.S.C. §103(a) based thereon is respectfully requested. This combination fails to disclose all of the elements now claimed in the subject Patent Application.

The dependent Claims are believed to show further patentable distinctions, but are believed allowable for at least the reasons presented *supra*.

It is believed that the subject Patent Application has now been placed in condition for allowance, and such action is respectfully requested.

If there are any further charges associated with this filing, the Honorable Commissioner for Patents is hereby authorized to charge Deposit Account #18-2011 for such charges.

Respectfully submitted,
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16 January 2009
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